A5. Underground Accelerator Laboratory for Nuclear Astrophysics

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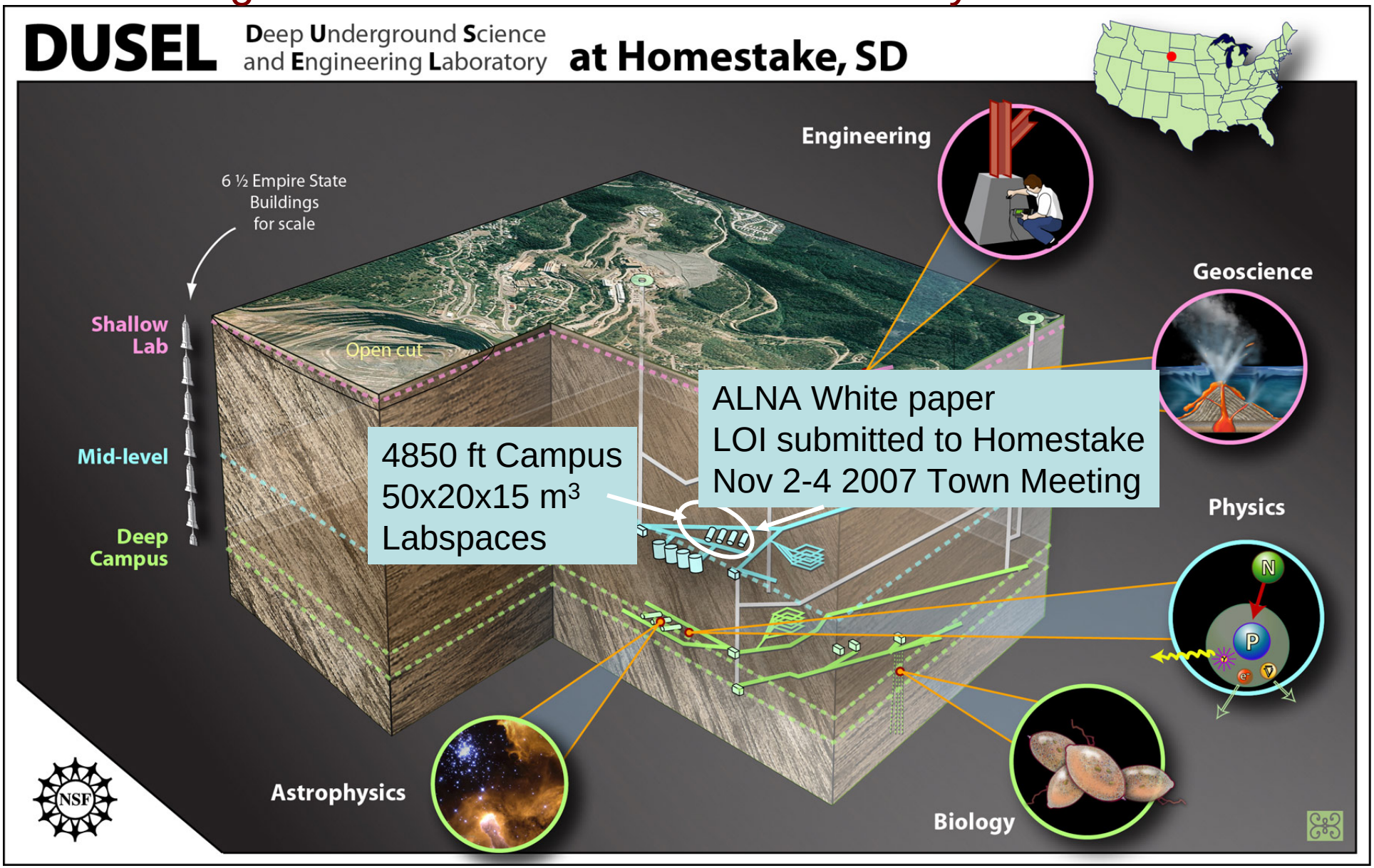
Dusel Town Meeting Nov. 2-4 2007

Unique opportunity to develop a world class underground accelerator laboratory



Goal: Define the experimental program

- Further definition of process to arrive at technical designs of the first suite of experiments to be included in the MREFC (Major Research Equipment and Facilities Construction) proposal (Solicitation 4).
- Needs in terms of R&D before technical choices for major experiments can be made and to reduce technical and cost risks.
- Science opportunities at Homestake before the MREFC decision and during construction + Education/Outreach
- Further technical input to the S3 design
- Coordination mechanisms with existing national and international underground laboratories/sites, funding agencies and other entities.
- Organization of the community and input to the NSF process.

Low Energy Accelerator Community at DUSEL

Lawrence Berkeley Laboratory
Colorado School of Mines
University of North Carolina
University of Notre Dame
Oak Ridge National Laboratory
Ohio University
University of Washington
Yale University

ATOMKI, Debrecen, Hungary
Ruhruniversität Bochum, Germany
Universität Frankfurt, Germany
INFN Geneva, Italy
INFN Gran Sasso, Italy
Universita Frederico II Napoli, Italy
Universität Wien, Austria

1st Workshop: Technical Needs of Underground Accelerator, Tucson AZ 2003
Working group for ALNA at DUSEL: http://www.jinaweb.org/dusel/, 2004
Collaboration & Exchange Agreement with LUNA, 2005
2nd Workshop: Scientific Goals of Underground Accelerator, Santa Barbara, CA 2006
DUSEL town-meeting, November 2007

Deliverables from each working group: a white paper, about 5 pages

- Science (draft could be written beforehand) 1-2 pages
- Priority for first suite of experiments 1/2 page
- Roadmap (rough order of magnitude of cost + time frame) 1 page
- R&D needs 1/2 page
- How to arrive at realistic cost and schedules 1/2 page
- Education & Outreach 1/2 page

These white papers will be open for comments for two weeks after the workshop and then submitted to the funding agencies.

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Parallel Session A5		**Saturday**	**November 3rd 2007**
10:45 - 10:50	5	Welcome and purpose of the WS	Daniela Leitner Art Champagne
10:50 – 11:20	30	Latest results from LUNA and lessons learned from running underground accelerators.	Pietro Corvisiero
11:20-11:45	25	Salt mine Accelerator Laboratory	Cristina Bordeanu
11:45 - 12:05	20	The LENA facility at TUNL	Art Champagne
12:05 - 12:25	20	Low energy underground accelerator R&D	Daniela Leitner
12:30 – 2:00		Lunch	
2:15-2:35	15+5	Approaching the stellar burning energies indirectly	Xiaodong Tang
2:35-2:55 pm	15+5	A recoil separator underground	Daniel Schuermann and Manoel Couder
2:55-3:15 pm	15+5	Radiative Capture Cross Sections With Tandem Accelerators	Michael Fammiano
3:15-3:30 pm	15	General discussion	All
Parallel Session A5		**Sunday**	**November 4th 2007**
8:30-9:15 am	45	White paper discussion	Art Champagne Daniela Leitner